

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Patent Application No. 09/291,748

**AMENDMENTS TO THE SPECIFICATION**

**Please delete the paragraph bridging pages 8 and 9, and replace it as follows:**

The transmitter shown in Figure 4 includes:

- ~~means 2 spreader unit 2~~ for spreading K incoming data sequences ST1 to STK using K respective spreading codes  $c_{Q_1}^{(1)}$  to  $c_{Q_K}^{(K)}$ ,
- ~~means 3 scrambler unit 3~~ for scrambling K data sequences ST'1 to ST'K from the ~~means 2 spreader unit 2~~ using a scrambling code  $\mathbf{c}_E$ ,
- modulator ~~means 4 unit 4~~ receiving the various sequences ST"1 to ST"K from the ~~means 3 scrambler unit 3~~,
- transmitter ~~means 5 unit 5~~ receiving the modulated signals from the ~~means 4 unit 4~~ and supplying the corresponding radio signals.

**Page 9, please delete the first full paragraph and replace it as follows:**

The receiver shown in Figure 5 includes:

- receiver ~~means 6 unit 6~~,
- demodulator ~~means 7 unit 7~~,
- ~~means 8 descrambler unit 8~~ for descrambling a data sequence SR" from the ~~means 7 demodulator unit 7~~ using said scrambling code  $\mathbf{c}_E$ ,

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- ~~means~~ 9 despread er unit 9 for despreadin a data sequence SR' from the ~~means~~ 8 descrambler unit 8 using K respective spreading codes  $c_{Q_1}^{(1)}$  to  $c_{Q_K}^{(K)}$ , and supplying K despread sequences SR1 to SRK to be used in processor ~~means~~ unit 10 by a decoding algorithm of the type mentioned above to supply a received data sequence SR.

**Page 9, please delete the second full paragraph and replace it as follows:**

The device in accordance with the invention, used on transmission, can be used in the spreading ~~means~~ unit 2 and the scrambling ~~means~~ unit 3 from Figure 4. In this case the device in accordance with the invention can be used in a base transceiver station for spreading incoming data sequences corresponding to different users served by the base transceiver station; it can also be used in a mobile terminal, by allocating different spreading codes to the user.

**Please delete the paragraph bridging pages 9 and 10, and replace it as follows:**

The device in accordance with the invention used on transmission shown in Figure 6 includes:

- ~~means like the means~~ grouping units 311 to 31K for grouping the data symbols of the kth incoming sequence ( $k=1, \dots, K$ ) into different blocks of  $[[Q_{MAX}/Q_k]] Q_{MAX}/Q_k$  symbols  $(d_1^{(k)}, d_2^{(k)}, \dots, d_{Q_{MAX}/Q_k}^{(k)})$ ,

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- ~~means like the means spreader units~~ 321 to 32K for spreading the blocks obtained in this way from the  $k$ th incoming sequence ( $k=1, \dots, K$ ) using the corresponding code  $c_{Q_k}^{(k)}$  to obtain a spread sequence including spread blocks of length  $Q_{MAX}$

$$(d_1^{(k)} \cdot c_{Q_k}^{(k)}, d_2^{(k)} \cdot c_{Q_k}^{(k)}, \dots, d_{Q_{MAX}/Q_k}^{(k)} \cdot c_{Q_k}^{(k)}),$$

- ~~means like the means grouping units~~ 331 to 33K for scrambling each of the  $K$  sequences  $ST'1$  to  $ST'K$  obtained in this way using a scrambling code  $c_E$  of length  $Q_{MAX}$ .

**Page 10, please delete the first full paragraph and replace it as follows:**

The means such as the ~~means grouping units~~ 311 to 31K are controlled in accordance with the maximal length  $Q_{MAX}$  and the corresponding code lengths  $Q_1$  to  $Q_k$ . If the length  $Q_k$  of at least one of these codes is variable, in particular in accordance with the bit rate of the corresponding incoming sequence, these means enable the number  $Q_{MAX}/Q_k$  of symbols per block to be varied, for the corresponding sequence, so that the product of this number by the length of this code remains constant and equal to  $Q_{MAX}$ .

**Page 10, please delete the second full paragraph and replace it as follows:**

The device in accordance with the invention is used in particular in the descrambling ~~means unit~~ 8 and the despreading ~~means unit~~ 9 from Figure 5. In this case of application to despreading, the device in accordance with the invention can be used in a base transceiver station or in a mobile terminal to despread an incoming data sequence,

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not only by means of the spreading code allocated to a given user (or by means of one of the codes allocated to that user if they are allocated more than one code), but also by means of the codes allocated to other users (and possibly other codes allocated to the user in question), in order to use a decoding algorithm such as those mentioned hereinabove.

**Page 11, please delete the first paragraph and replace it as follows:**

The despreading device shown in Figure 7 includes:

- ~~means 34~~ descrambler unit 34 for descrambling the incoming sequence SR'
- using a scrambling code  $c_E$  of length  $Q_{MAX}$ ,
- ~~means 35~~ grouping unit 35 for grouping the data symbols of the descrambled sequence SR' obtained in this way into different spread blocks of length  $Q_{MAX}$ ,
- means such as the ~~means 361 to 36K~~ despread units 361 to 36K for despreading the spread blocks obtained in this way by means of respective codes such as the codes  $c_{Q_1}^{(1)}$  to  $c_{Q_K}^{(K)}$  to obtain K despread sequences SR1 to SRK formed of different blocks of  $Q_{MAX}/Q_K$  symbols ( $k=1, \dots, K$ ).